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SUBJECT: SOUTH AFRICAN WEATHER SERVICE CELEBRATES WORLD
METEOROLOGICAL DAY

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¶1. (U) Summary: The South African Weather Services (SAWS) hosted a World Meteorological Day seminar for over one hundred government, private sector, academia and civil society participants in Pretoria on March 23 - 24, 2009. Discussion topics included weather-related disasters and their impact on human health; early warning systems; air pollution and climate change; forecast-enabling technologies; and international collaboration including partnership with NASA. Participants agreed that air quality, climate and weather challenges could provide opportunities for innovation and international partnerships. End Summary.

Weather-related Knowledge Necessary for Effective Climate Change Policies

¶2. (U) SAWS hosted a World Meteorological Day seminar on March 23-24, 2009. SAWS CEO Dr. Linda Makuleni stated that the World Meteorological Organization's (WMO) collaborative efforts have increased scientific knowledge about air-quality services, weather and climate predictions. She noted that scientists predict severe climate and weather patterns for the future, and that meteorologists, climatologists and policymakers need accurate and high quality instruments and information to make climate change policy decisions.

¶3. (U) SAWS Operations General Manager Dr. Jonas Mphepya told attendees that eighty percent of all natural disasters are caused by weather. He noted that polluted indoor air has cost the government approximately R3.2 billion (\$320 million) in health care costs and lost wages since 2002. Dr. Mphepya noted that scientific knowledge of air quality, climate and weather patterns would help the country prepare for climate change mitigation and adaptation.

SAWS Employing State-of-the-Art Technologies

¶4. (U) SAWS Senior Manager for Research Dr. Deon Terblanche explained that SAWS employs a number of technologies that provide air quality, climate and weather information. The "Meteorsat", acquired from the US, collates vegetation indexes and sea surface temperatures using high resolution images. SAWS also make use of the South African National Weather Radar Network, also acquired from the US, the South African Lightning Detector Network, the Global Instability Index, and the Regional Instability Index. Both indexes provide early warning services against climate or weather-related dangers. Dr. Terblanche said the Early Warning System (EWS) is the most critical component of the SWAS technologies. Dr. Terblanche added that SAWS uses a Numerical Weather Prediction system, which simulates the future to produce a forecast. Terblanche noted that

it is difficult to obtain accurate rain forecasts at the moment because there is insufficient data. SAWS plans to establish automatic rain forecast systems across the country to address this deficiency.

Global Atmospheric Watch

¶5. (U) The Global Atmospheric Watch (GAW) at Cape Point, coordinated by the WMO, monitors the chemical composition of air masses reaching Cape Town. Data regarding several greenhouse gases (GHG) is collected, and collaboratively sampled by universities in South Africa, France and the US. Data is archived locally and at the GAWS Headquarters in Tokyo.

¶6. (U) South Africa's other GAW base is SANAE IV, the country's Q6. (U) South Africa's other GAW base is SANAE IV, the country's research and weather station base in the Antarctica. WMO/GAW Scientific Advisor Ernest Brunke said GAWS studies have shown that the Southern Ocean is losing its capacity to sink carbon. He noted that the Council for Scientific and Industrial Research (CSIR) is investigating the cause for this phenomenon at SANAE IV.

Air Pollution Affecting Rainfall

¶7. (U) SAWS's Scientist Dr. Patience Gwaza explained that South Africa's current Air Quality Management (AQM) plans are small scale and focused on homes, offices and cities. She noted that aerosol particles disturb the astrophysics process of precipitation, producing anything from strong thunderstorms to no precipitation at all. She said air pollution has caused the gradual reduction in precipitation over Cape Town. Gwaza noted that sixty percent of the

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rural population contribute to air pollution by using firewood as an energy source for heating and cooking.

¶8. (U) Dr. Gwaza said South Africa has enacted an Air Quality Management Act but there are no laws regulating climate change mitigation or adaptation. She emphasized that there should be separate and specific policy directives regarding climate. Dr. Gwaza said policy makers also should harmonize policies regulating climate change and air quality.

Regional and International Collaboration

¶9. (U) South African permanent WMO Representative Dr. Makuleni said international meteorological cooperation could provide Africa with reliable data collection and interpretation skills, as well as new scientific applications to reduce potential disaster impacts. South AfricMg7Qby the WMO, and designed to reduce impacts of weather-related disasters in the SADC region.

NASA Relations

¶10. (U) Dr. Gwaza said SAWS collaborates with NASA on AQM, and it is happy with the accuracy, quality and efficiency of the estimates from these joint efforts. Aircraft and ground-based equipment are used to acquire data. Gwaza said SAWS has acquired useful technical expertise from NASA. She added that future joint programs would include modeling impact assessments and remote sensing. SAWS will borrow models from the EPA and modify them to suit the South African situation.

Comment

¶11. (U) The SAWS World Meteorological Day (WMD) demonstrated SAWS capabilities and revealed its meteorological shortcomings. SAWS notes that collaboration with the U.S. has proven useful. Increased U.S./South Africa meteorological partnerships could prove beneficial in future climate change discussions with South Africa.
La Lime